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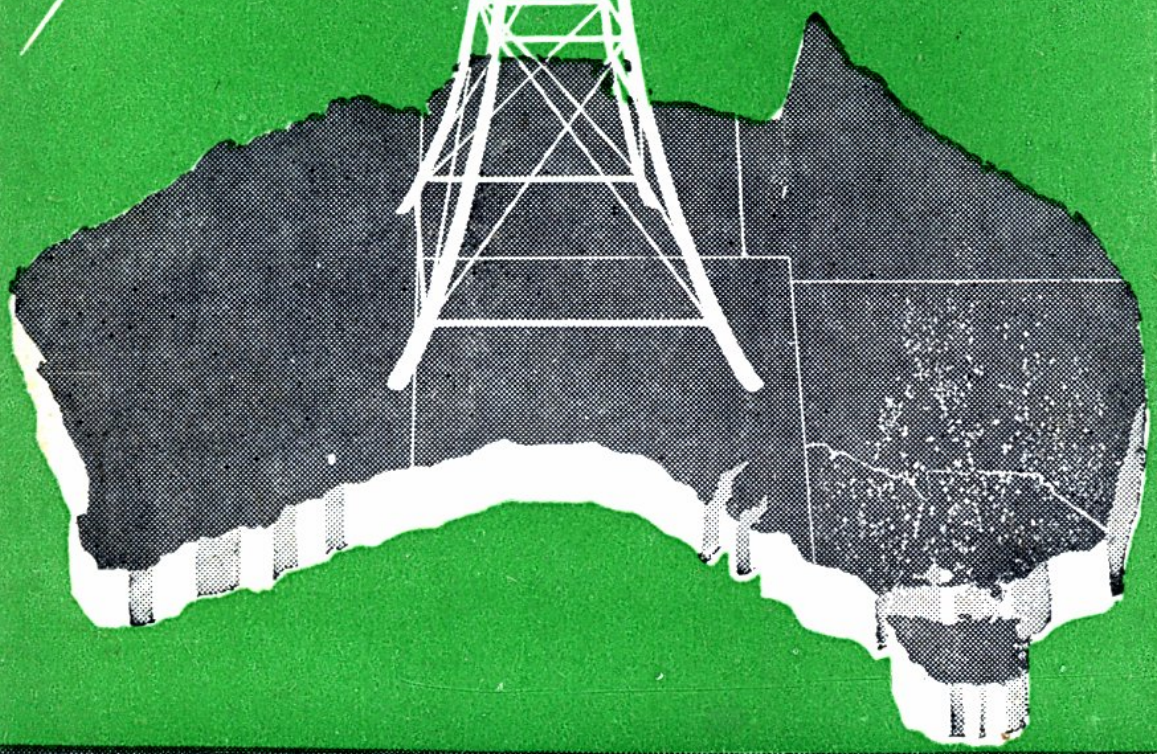

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PRICE 6D

SEPTEMBER, 1939

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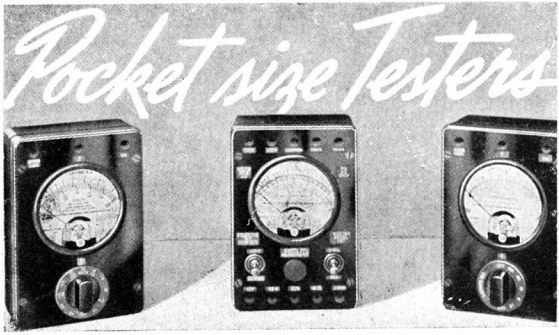

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AMATEUR RADIO

Published in the Interests of Radio Amateurs and Experimenters throughout Australia.

VOL. 7 No. 9. 1st SEPTEMBER, 1939

OUR ORGANISATION

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WIRELESS INSTITUTE OF AUSTRALIA
(Victorian Division)
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Perth Representative:—
R. H. ATKINSON,
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Printers.—
H. HEARNE & CO. PTY. LTD.,
285 Latrobe Street, Melbourne, C.1.

Accounts Department.—
LARGE & POWERS,
Chartered Accountants (Aust.),
422 Collins Street, Melbourne.

MSS and Magazine Correspondence should be forwarded to The Editor, "Amateur Radio," Box 2611W, G.P.O., Melbourne.

CONTENTS.

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EDITORIAL

TECHNICAL CONTRIBUTIONS.

..We learn by reading. Radio progress can be watched most satisfactorily by seeing what the other fellow is doing through magazines. Where would we be without QST and RADIO as our main sources of up-to-date information? When you come to think of it, we buy someone elses brains for a few shillings a month—and imported brains at that, too. You cannot tell us that, with the world wide reputation the Australian craftsman has, we haven't amongst our own fellows budding article contributors of equal standing. The quantity may not be here with only 2000 hams to choose from, but the QUALITY lies right here in the largest island in the world. We have been extremely proud of many of our past presentations and we aim to maintain a high standard from now on. Our technical bag is fed by contributors known to us and by men who answer the call when approached. However, we can't possibly seek material from all over 2,974,581 square miles, and we look to hams and all radio-minded men to assist. This is an open invitation to all. We can all try our skill, and if it is not quite up to standard, then our technical department will lick it into shape. "Amateur Radio" was never meant to be a competitor to overseas journals — actually technical articles were originally considered the minor section of our publication; but the mag. has improved and the technical section is gaining importance monthly. The boat is getting big now and we MUST have more oarsmen. This invitation is open to ALL, don't forget. We do ask also that photographs be clear and on glossy paper, texts be written or typed with double spacing, and only essential diagrams of circuits be supplied.

In reply to yours . . .

Congratulations on improved magazine for August—Sec. South Aust. Div. . . . . It's something like a magazine now, good matter, good paper, good printing—VK3TL . . . . The new mag. should easily find wider acceptance among hams and advertisers alike—VK6WZ . . . . A splendid issue, most readable . . . . a fine effort—Trimax Transformers . . . . Increase our order next month — McGill's Agency . . . fb a great improvement—VK2AFJ.

Thanks! Now we want to prove it was no freak issue, so this month we increase to 40 pages. It's 40 and over from now on.

Adjusting the Rotary Array

(Close spaced element type)

By VK3ML, Technical Editor

It is vital that an array be very carefully adjusted if maximum gain and results are to be obtained. From much experimental work, it has been determined that the most practical method of adjusting either a 2, 3, or 4 element array is, fortunately, also the most simple, and one that requires the least amount of expensive equipment.

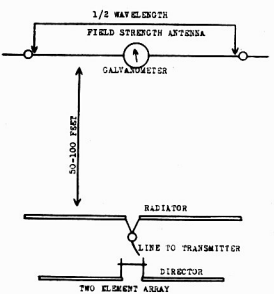
The rotary beam antenna, when properly adjusted, is capable of covering quite a wide range of frequencies within one frequency band. That is to say, the antenna will respond, load well, and radiate efficiently over wide limits within the band for which it is designed without additional adjustment, when moving from frequency to frequency within this band.

It is recommended therefore, that the array be initially adjusted for a frequency as close to the centre of the band as possible, and it is felt that if this initial adjustment has been accurately accomplished, satisfactory results will be obtained over a wide range of frequencies within this band.

THE TWO ELEMENT ARRAY

Assemble the array. Although it is recommended, it is advisable to make adjustments after the array has been installed in its permanent location and operating height above ground, this might not perhaps be possible in many cases. Therefore a comfortable working height above ground should be chosen. Attach transmission line to radiator and transmitter.

Erect a simple half wave antenna with an R.F. thermogalvanometer connected in the centre of same at some convenient location in front of the array. This antenna can consist of nothing more than a couple of pieces of bell wire, each a quarter wave long and connected one to each terminal of the galvanometer. Good insulation on this antenna is not important. However, this antenna must be tightly strung and very rigid. This field strength antenna MUST be erected in the same plane as the array. If the array is horizontal the antenna must be horizontal. Distance between the array and the field strength antenna is not too important; however it is well to erect the field strength antenna at a distance of approximately one wavelength away if possible.



At this stage, a comparatively low power level may be fed to the radiator in the array—50 watts or less will usually suffice. With the director turned away from the field strength antenna, and with the radiator interposed between the director and the F.S. antenna, slowly begin adjusting the length of the director, or stub at the centre of the director. The adjustments should be made an inch or less at a time, making sure at all times that a tight

connection is maintained. This adjustment should be continued until the LOWEST POSSIBLE current is indicated by the galvanometer in the F.S. antenna. When the director length which provides the lowest reading, as indicated above, has been ascertained the array will then be accurately adjusted for maximum radiation off the director side and minimum radiation off the radiator side. It then should reflect an impedance of 13 ohms and, therefore, must be fed with a transmission line capable of matching this impedance.

From a general operating standpoint, it is usually desirable to feed this type of array with a somewhat higher impedance transmission line. If this is desired, the director should not be adjusted to indicate minimum current at the centre of the F.S. antenna, but should be adjusted to bring the current down to this point. After the LOWEST current reading is obtained, the director should then be slightly lengthened to a point which provides a meter reading approximately 10% higher than absolute minimum. With the array adjusted in this manner, an impedance of 28 ohms should be reflected to the transmission line and, therefore, a 28 ohm line should be used between the transmitter and radiator.

After completing the adjustments as above, rotate the array 180 deg. so that the director FACES the F.S. antenna. It should then be found that in this position the current in the F.S. antenna will be ten times as great as in the former position with the director away from the F.S. antenna. This indicates that the power ratio of radiation off the director side to radiator side is ten to one, or that there is an increase in radiation off the front compared to the back of 10 decibels. It will be found, while rotating the array, that end radiation will be so low that it may be considered negligible.

FOR THE 3 ELEMENT ARRAY

Assemble and install the array following the same procedure as outlined above for the two element array. Also erect the F.S. antenna in exactly the same manner as outlined above, keeping in mind that the F.S. antenna MUST be in the same plane as the array.

Feed a low power level (50 watts or less) to the radiator as outlined above, with the REFLECTOR facing

the F.S. antenna and disconnected at the centre stub. If no tuning stub is used, be sure that the reflector is broken at the centre, so that it will not affect the initial adjustment of the director.

Now, begin adjusting the DIRECTOR stub, or length of the director for LOWEST current in the F.S. antenna, and leave the director adjustment at this point.

Next, allowing the DIRECTOR to remain connected, reconnect the REFLECTOR and adjust the centre stub or length of the reflector, until a still LOWER current begins to appear at the F.S. antenna. Continue adjusting the REFLECTOR until the LOWEST possible current is indicated in the F.S. antenna.

The array should now be rotated 180 deg. so that the DIRECTOR faces the F.S. antenna. It is now well to readjust very slightly the length of the DIRECTOR to a point which provides absolute maximum current as indicated by the galvanometer in the F.S. antenna. When this position is located, the three element array will be correctly adjusted, should provide a front to back ratio of approximately 1000 to 1, and should reflect an impedance of 8 ohms to the transmission line. Therefore it must be fed either with an 8 ohm transmission line or with a transformer capable of providing the correct transformation ratio between an open wire line and the radiator.

FOR THE FOUR ELEMENT ARRAY

Assemble and install the four element array in the same manner as outlined for the two and three element arrays. Set up the F.S. antenna at the same distance away from and in the same manner as previously indicated. Be sure that the F.S. antenna is in the same plane as the array.

With a power level of about 50 watts being fed to the radiator and with the REFLECTOR facing the F.S. antenna but disconnected at the centre, adjust the DIRECTOR which is closest to the radiator until a minimum current appears in the F.S. antenna.

Now, adjust the second DIRECTOR which is farthest from the F.S. antenna until a sligthly lower current is indicated in the F.S. antenna. The first director should be connected and left at its previous setting while adjusting the second director.

Reconnect the centre of the REFLECTOR and adjust for a still LOWER current reading at the centre of the F.S. antenna. The array may now be rotated through 180 deg. so that the F.S. antenna is in front of the array, faced by the DIRECTORS. It may be well now to check the adjustments of all elements, and may perhaps be necessary to readjust somewhat the length of the DIRECTORS. These should be adjusted with the array in this position for maximum or HIGHEST current in the F.S. antenna. When adjustment of the four element array is completed, the forward gain should be 13 decibels over a reference horizontal dipole erected in the same plane and at the same height above ground. The front-to-back ratio should be 35 DB, which is equivalent to a power ratio of 3162 to 1. The impedance of the array should now be approximately 5 ohms. The four element array, therefore, should be fed either with a five ohm transmission line or with a suitable transformer working in conjunction with an open wire line.

It has been ascertained from experimental work that the above procedures are perhaps the most accurate that can be followed in the adjustment of a multiple element beam antenna. Field strength meters of the electronic type are probably capable of performing the same task. However, many variable factors are encountered with this type of equipment. These may include gradually lowering battery voltages, body capacity effects etc., which tend to produce overall inaccuracies during the period of time involved in completing the adjustment. Most F.S. meters of the electronic type also usually employ some form of vertically polarised antenna of a comparatively short length. By reason of this fact, the checking of horizontally polarised wave emanating from an array may produce many inaccurate measurements.

One word of caution: Be sure that the R.F. thermogalvanometer employed is of reputable make, as cheap meters are not suitable in this service. This meter should preferably have a 0-100 scale.

BIASED.

By VK3OC.

My friend Olsen called to see me that other night after a long absence, and after assuring myself that he did not want to sell me a couple of tubes or a transformer, I reluctantly let him into the shack. When I first made his acquaintance he told me that he left the fiords in Norway many years ago, to which I replied that I did not know they made Fords in Norway many years ago, and anyway, why leave them there unless the duty and primage was too high. After sorting ourselves out and coming to the conclusion that he meant fjords, he then proceeded to tell me the old story about becoming a ham, living a few doors away, and what did I think of the idea of a vacuum tube without a glass envelope. I told him I did not think much of it, but he insisted that without a glass envelope the tube would operate with much higher voltages without heating up. At this stage, being much younger and stronger than I am to-day, I threw him through the window, and heard no more of him until a frenzied blurp-blurup-a-blurp, almost shattered my eardrums when listening for an elusive country a few nights later.

However, Olsen in due course became a good ham, and a key in hand meant the world by the tail. He was amassing a string of countries as long as a refugee's overcoat (RX told me that one), when summer came and the blow fell. Being moved one day to go and immerse his body in the bay at Elwood, he fell foul of a dizzy blonde by the name of Toots, who, appeared before him in a bathing costume that revealed practically everything except the filling in her back teeth. Having some Scandinavian blood myself, I can understand his susceptibility, and to cut a long story short, he was hooked in less time than it takes to QSO a Yank. Needless to say, peace reigned in the ether around our way, and my own DX score began to mount again. This was interspersed with sundry visits from Olsen, with the object of trying to sell me a few meters, tubes, and transformer or two, and what have you. However, being married and full of troubles, and having been through the mill myself, all he was successful in getting from me was some good advice, which he promptly ignored.

This brings us pretty well up to date, and if you have borne with me this far you will understand why his last call was greeted somewhat suspiciously. The story he told removed all doubts. It would appear that the shapely Toots had some months before instigated an economy campaign with the object of having Olsen save up his hard earned piastres for the purpose of buying a ring and making things all legal like. The saving being accomplished, what does Olsen do but get the ham radio bug again, and busts the lot on a heap of new gear which would almost make 6ITH envious. And what does the beautiful Toots do but drop him cold, and last heard of she had taken up with a guy whose hobby was cine-photography, and who knew a fellow amateur in Hollywood who knew Cecil de Mille's third yes-man, and maybe if she was good she might get into the movies really.

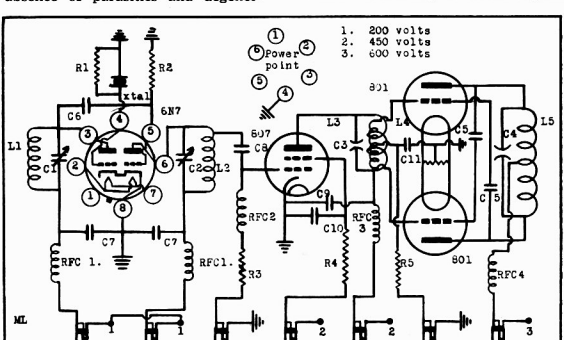
So that's the story of Olsen, and it all goes to prove something, but just what I don't know. I do know that the blurp-blurp-a-blurps have started, and that Olsen is adapting the family clothes hoist to a rotating beam, and I expect him around any time to tell me that he has re-invented a grid leak drip pan. But after measles, I'm too weak to throw him out the window again.

A 100 Watt C.C. Signal on 56 m.c.

By Leo Guest, VK3GG

In order to take the first step in an endeavour to establish contact with real DX stations on five metres a transmitter was planned that would provide a solid and stable signal; in other words, moderate power and definitely quartz controlled. With modern communications receivers and the hope of hearing CW signals nothing but a **stable** transmission would satisfy. At the same time, as five seems to be a home for phone operation, a modulated amplifier that would stand deep modulation was very necessary. Most fortunately the transmitter described here performed perfectly first pop—that is, with the absence of parasitics and degeneration, that were fully expected in a push pull neutralized amplifier on this high frequency. These missing features were probably due to a planned layout that provided for short leads and interactionless layout of components.

Starting from a pair of 80ls and a 28mc Bliley rock on hand a few trials were conducted with exciter layouts to see what hook-up would give the optimum results with a minimum number of stages and gear. Two articles were borne in mind in the preliminary stages; firstly, that by Wolfskill in QST for January 1938 under the heading of "56 mc Crystal



C1 85 m.mfd variable.
C2 50 m.mfd variable.
C3 12 m.mfd neutralizing condenser.
C4 12 m.mfd neutralizing condenser.
C5 2-12 m.mfd midget variable.
C6 100 m.mfd mica condenser.
C7 0.01 mfd mica
C8 30 m.mfd concentric condenser.
C9 0.002 mica.
C10 0.1 mfd mica.
C11 0.002 mfd mica.
RFC1 Eddystone type 1011 chokes.
RFC2 Eddystone type 1010 chokes.
RFC3 Eddystone type 1022 chokes.
RFC4 Eddystone type 1022 chokes.

L1 8 turns 14g ¾-in. diam. for 28mc xtal.
L3 3 turns 14g ¾-in. diam. for 28mc xtal. Winding length, 1-in.
L3 4 turns 14g 1-in. diam.
L4 6 turns centre tapped. ¾-in. diam. winding length. L3 and L4—3-in.
L5 5 turns 14g 1-in. diam. Winding length, 3-ins.
R1 50.000 ohms 1 watt.
R2 30.000 ohms 1 watt.
R3 50.000 ohms 2 watt.
R4 25.000 ohm voltage divider.
R5 3000 ohm voltage divider.

Control with 28 mc Crystals," and the other by VK2GU, "Power tuning Condensers for Ten and Five," in A. R. for October 1938. In the first article, recommendations were made for the use of tubes like 6J5G, 6E6, 802 and RK34. The 802 as a tri-tet doubling to 56 mc seemed the berries; but, no matter what connections and changes were effected the only output that could be realised was that just sufficient to drive the writer coo-coo — the match was finally abandoned. A valuable 6N7, not earning interest on its capital investment on the shelf, was then eyed with suspicion, but, as Mr. Wolfskill said, "6E6 or RK34 would actually work," the oscillator layout was altered to take the allied 6N7. With leads about as long as terminal lugs and silver plated coils with ceramic bases of the Eddystone vintage for the tank coils an output of 56mc in the second triode section, that was more than ever hoped for, was obtained. As a matter of fact, this tube functioned nearly as well as a quadrupler from 14mc crystals as it did as a mere doubler from 28mc. In any case, both crystal fundementals are used for driving the buffer stage — the 807, to its full output with the rated 5 mills grid drive. So the chap who does possess a 28mc rock is no better off than the owner of a 14mc cut under these conditions. Ten metre crystals creep very considerably and an oven has had to be installed for this transmitter, but that will be described later.

The 807 seemed the logic tube to use as a buffer; the only feature to be avoided being self oscillation. This was checked by placing the grid coil under the chassis and the plate tank on top. (By the grid coil is meant the plate coil of the 6N7 doubler section, as the 807 is straight capacity coupled therefrom.) Now this is where VK2 GU's recommendations were heeded. A disc type neutralizing condenser was used to tune the 807 tank circuit hitting resonance at about 3m.mfd capacity. There is no doubt that the low capacity tank speaks for itself, judging by the plate mills dip and no trouble is experienced in giving the 801s 50 or more milliamps grid drive. No neutralization was necessary for the 807 and the only shielding being a tube can run half way up the valve

from the chassis. Insulation losses were kept down to a minimum in the plate tank by screwing the coil straight onto the disc condenser which is made from Frequentite 30,000 volt pillar insulators. Here again, silver plated coils would have been used if they had been available in the desired diameter. However, the next best coating, enamel, 14 gauge wire made up a sufficiently rigid coil requiring no supports other than at the ends.

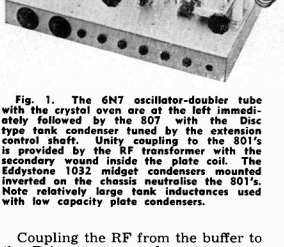


Fig. 1. The 6N7 oscillator-doubler tube with the crystal oven are at the left immediately followed by the 807 with the Disc type tank condenser tuned by the extension control shaft. Unity coupling to the 801's is provided by the RF transformer with the secondary wound inside the plate coil. The Eddystone 1032 midget condensers mounted inverted on the chassis neutralise the 801's. Note relatively large tank inductances used with low capacity plate condensers.

Coupling the RF from the buffer to the P.A. stage proved no worry as straight transformer coupling could be employed doing away with link losses and mis-matches. The 801 grid coil was wound to fit inside the 807 plate tank and is untuned in order that maximum voltage could be developed at the 801 grids. The tuning of the buffer tank coil had sufficient "pull" to draw the grid tank into resonance.

Neutralization of the 801s offered no difficulties with the small 2-12 m.mfd spaced midget condensers. As 2GU recommended, a "single ended" disc type condenser was employed in the 801 plate circuit. It only required a centre tap on the grid coil to complete the necessary bridge balance and a centre tapped plate coil for the HT feed. A perfect balance was obtained that led to easy neutralization, that may have proved difficult with a standard split stator condenser in the plate circuit owing to the likelihood of a capacitive unbalance between sections in this type of condenser. The 801s, under pressure of 600 volts, take 250 milliamps off resonance and dip to about 30 mills when tuned. This performance is certainly high for 56 mc and with the concentric line fed coaxial antenna a single turn coupling coil pulls the plate current up to 150 mills and more, depending on the power output desired and modulator requirements.

Having briefly described the reason for this layout and the perfomance which the unit gives we can now consider the practical design and circuit details.

The whole transmitter is made on an aluminium chassis measuring 18 x10 inches and 3 inches deep. In order that the one milliamp meter might serve all purposes insulated closed circuit jacks (7 of 'em) are

seen in the picture mounted along the front. They provide the following readings:

Plate of 1st section 6N7
Plate of second section 6N7
Grid current to 807
Screen current to 807
Plate of 807
Grid current to 801s
Plate current to 801s

The dials to the left of the chassis are attached to the 6N7 plate tank condensers. Insulated extension controls are used for the disc type condensers as the threaded spindles are "hot." For the sake of short leads the plug in coils in the 6N7 plate circuit are mounted underneath the chassis and along side the tube socket. With the HT fed through U HF chokes and well by-passed at the low potential end of the tanks no trouble of self oscillation in the6N7 was experienced.

The circuit shows the wiring of the 6N7 as seen from the bottom of the chassis and gives a clearer idea of how the components fall into place for the short leads. Tuning of L1 and L2 by C1 and C2 are as for any twin triode oscillator circuit and the

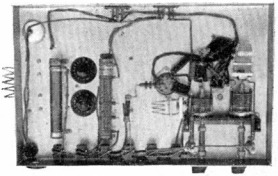


Fig. 2. Inverted view of the works. The layout of the 6N7 stage permits short RF wiring. Eight turns of the silver plated coil on the extreme right tune the 28mc xtal tank with the three turn 56mc doubler coil at the left which lies adjacent to the grid contact of the 807. The lead-through insulator at the left feeds the 600 volt H.T. to the 801's.

dip is very pronounced in both plate circuits. A check on the doubler frequency may be necessary to ascertain

whether 56mc has been picked off alright. Bliley do not recommend voltages above 200 for the6A6-6N7 type tube with H.F. crystals — not that it would be necessary because no difficulty was experienced in obtaining 5 mills grid drive to the 807 on 5 meters.

Grid leak bias was chosen for the 807 grid because it is simply the most economical system and allowed the cathode to be grounded directly, which might otherwise cause a spot of regeneration when a wire wound resistance is placed in series at this U.H.F. A small concentric variable coupling condenser linked the 6N7 to this stage and one having a maximum capacity of 30 mmfd was sufficient to obtain 5 mills grid current and not overload the 6N7 doubler tank.

Only by means of cut and try could a coil be made for the 807 tank circuit with the small 2-12 mmfd disc type condenser for tuning. Even when the right number was found, the final adjustment to obtain as high a C as possible was made by spreading the turns out or pressing them in as required. Turns spacing makes a very considerable difference to the inducatance on 5. At this stage the 807 was checked for performance with the HT on, and a dip was registered from 150 to 30 mills, which is quite fair.

Driving the 801s was the next problem and, again, only a juggling of the grid turns would give the necessary grid current. Neutralizing was a cinch and worked like an 80 meter transmitter. The 2-12 mmfd midgets covered the range necessary for the 801 tube. 30 mills were recorded in the 801 grids, which is their rating when in push-pull. When the tank turns for the P.A were corrected the dip mentioned before of 250 to 30 mills was obtained. We now had a transmitter that was stable and delivered plenty of RF. This was checked up after connecting up the 6L6 modulators and obtaining local reports. "B.C quality with a sock" was the richest reward for careful design and layout.

Crystal Oven

USED IN 100 WATT TRANSMITTER FOR 56 MC

By VK3GG.

In furnishing the following Article re an easily constructed Crystal Oven, I would like to state that it is open for further experimenting, although rather critical tests were undergone as to its stability.

Using a Bliley 10 meter Crystal in the original Oscillator Circuit, it was found to drift many K.Cs. The incorporation of this little Oven, however, and giving the Transmitter time to warm up, soon showed favourable results; and parts used:—

One old Radiator Cone with wire taken off, and replaced with Asbestos Cord.

2 2.5 Pea Lamps, and 2.5 v. supply.

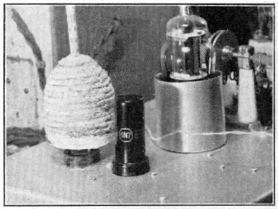
1 Thermometer reading to 120 deg. fah.

1 small tin of Insalite (Liquid Porcelain)

The Crystal and Holder is placed in the open end of Cone, and sealed with Insalite. Two holes drilled in sides for Pea Lamps, and one in top for Thermometer, and again sealed with Insalite. A Crystal of 28.006 K. Cs was used and measured in the laboratory at 80 degrees fah. Variation of same is 43 cycles per megacycle, per degree centigrade.

In regard to any frequency above 80 degrees fah. it was found to be perfectly stable at 84 degrees fah., with one bulb on. For summer conditions both bulbs will be used to get above maximum room temperature.

This is only a suggestion for the amateur who really wants a stable signal, and where the necessary parts are obtainable from most junk boxes.



The oven is mounted right over the Bliley crystal holder. Approx. 80 def F. is maintained with the pea lamp bulb heaters.

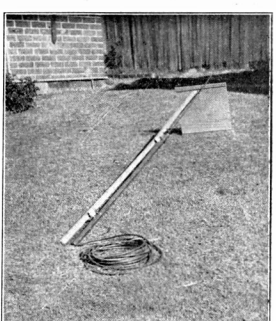
Concentric Feed-Lines

A Point to Watch

By Don. Knock, VK2NO

It is at the U-H-F's that the merits of feed-lines of the concentric type are really emphasised, as anybody will realise after attempts to push R.F. at 56 M.C. along 60 feet or so of twisted pair. What gets to the radiator with some of these twisted affairs wouldn't be enough to singe a gnat's whiskers, where the line is anything more than about 15 feet long. It's a different story with cable of the Bassett 64/200 type, and 100 feet or so doesn't appear to have any really serious loss at 56 M.C. It goes without saying that the lower frequencies are better still. In the course of testing various coaxial aerials fed with Bassett 64/200 around Sydney, an interesting point was revealed—one that is not readily apparent. But when the writer ran across it, the obvious smote through the fog of doubt like an ultra-violet ray.

Such excellent results were obtained with the 56 M.C. coaxials at VK2NO and VK2EM, that others were persuaded to do likewise. One week-end, 56 M.C. tests were run off with certain craft at sea and one station using a coaxial to specifications, fell far short of the expected results. Using the same gear in his home location, rough tests with an absorption meter near the coaxial aerial showed that there was definitely more R.F. indicated in a plain doublet fed with twisted pair. This just didn't make sense and the cause of the deficiency was sought for several days over morning coffee in the city. Suddenly the light dawned. The doublet antenna had 12 feet of twisted cable straight to the radiator from the TX. With the coaxial, 30 feet of Bassett cable was used, but because both aerials were used in a small room for the tests, about 10 feet of this cable was left lying coiled on the floor. Going along the Bassett cable with the absorption meter showed no line radiation until the coiled portion was reached, and then the indicator lamp lit brightly. There was some R.F. in the radiator, but not very much. Straightening out the cable cleared up the trouble. Those coiled turns were either acting as an efficient R.F. choke at 56 M.C., or the impedance of the line was considerably altered, providing a bad mismatch at the radiator. When the aerial had been used at sea for the week-end tests, the cable had been coiled for almost the whole length, and just dropped on the deck behind the transmitter. Subsequent tests of



A 56 MC Coaxial Aerial made by VK2NO as described in "A.R." August, 1939.

reception at a station 14 miles distant when the cable was straigthened out at the home location, showed, on an accurately calibrated S meter, a gain of 8 Db. with the plain coaxial over the twisted pair doublet. Coincidentally, that gain is just what W.E. engineers claim for the coaxial over a plain half-wave radiator. The point then, when using flexible concentric feed-line is to avoid any complete loops in extra length. The line need not be straight by any means, but the straighter the better. Bends at right-angles don't appear to be serious. Best way of course is to instal a feed-line to the radiator as straight as possible, and simply cut the cable to the required length. An odd length left over from a 50 feet coil will be useful anyway for links in transmitters and other purposes.

The W8JK Beam Antenna

By R. E. Trebilcock, VK3TL

This article is written for those Hams who have not the wide open space in which to erect a Vee Beam antenna such as is described by **VK3BM** in the August number of "Amateur Radio," but who desire something better than a half-wave zepp. For such there are few, if any, arrays to compare with the Kraus Beam, or "W8JK Beam," as it is familiarly called.

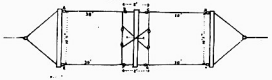
This antenna has several distinct advantages:—

It is very compact.
There are no structural difficulties, and
Measurements are not critical.
The beam is comparatively wide, but nevertheless
The gain is substantial.
It can be centre fed or end fed to suit circumstances.
It can be Zepp-fed, or a stub can be used if preferred.
Lastly it is not costly.
Incidentally it is also a good re-receiving aerial with marked directional properties.

I shall first describe a centre-fed, two-section beam, with zepp. feeders, for use on the 20 metre band. Essentially, it consists of two parallel full wave antennae spaced at approximately ½ wave-length and transposed at the centre. The antennae are fed 180 deg. out of phase. The result is that each acts as a powered reflector to the other, and the maximum radiation is in the plane of the elements and at right angles to their length. There is little radiation end-ways and practically none vertically—hence the gain in other directions.

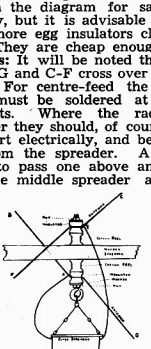
Spreaders: Fig. 1 shows the construction of the array. It will be seen that three light spreaders are required—1-in. x 1-in. oregon will do nicely. The distance between the elements should not be less than .1 of a wave length, the optimum being .15. A lower value than .1 results in rapid falling off of gain.

Measurements: The measurements shown in Fig. 1 are calculated for the middle of the 20 metre band, and will give satisfactory results all over the band. The cross wires B-G and C-F should be 10-ft. 8-in., and the feeders must be attached exactly in the centre. Care should be taken that the measurements from the point of attachment of the feeders to the ends of the antennae are all the same. The spreaders should not be shorter than 10-ft. 5-in., or some of the gain will be sacrificed.



Insulators: Single insulators are shown in the diagram for sake of simplicity, but it is advisable to use two or more egg insulators close in series. They are cheap enough.

Feeders: It will be noted that the wires B-G and C-F cross over in the middle. For centre-feed the zepp. feeders must be soldered at these mid-points. Where the radiators cross over they should, of course, be kept apart electrically, and be insulated from the spreader. A good plan is to pass one above and one below the middle spreader and to



support each on a stand-off or reel insulator.

Mechanical Attachment of Feeders: If the cross-over wires were made to carry the weight of the feeders, they would tend to draw the antennae together. Hence the weight of the feeders is taken by the aerial spreader.

It is desirable to equalize the tension of the feeders, not only between each side of the aerial system to avoid accidental tilting of the array, but also between each side of the zepp-feeders to avoid their hanging askew. It is also desirable to have such a connection beteen the feeders and the aerial system as permits of a variation in angle between the two, in case it is desired to experiment with the direction or tilt of the array. The diagram (Fig. 2) shows how this may be done. The diagram is self-explanatory. The threaded hook is about 5-ft. long and 3/16-in. diameter. The two reel insulators may require to be plugged with wood bored to take the hook. The wires W-X and Y-Z should be of equal length, and it may be necessary to use a length of glass tubing as an insulator to keep them in their correct places. Insulating tape will secure the tubing, especially if ½-in. of each end is roughened on an emery wheel. The X and Y represent the mid-points of the cross over wires. These wires should be fastened to the reel-insulators with insulating tape.

The practice of terminating a zepp with a good insulating spreader and a yoke of insulators with suspension at the apex and flexible jump-over wires for the electrical connection is worthy of general adoption for zepp. connections.

(Continued on page 35)

TRADE FLASHES.

John Martin Pty. Ltd. announces that the new range of **"Raymart"** tuning condensers will be found to have the following advantages over other types.

Triangulated frame, giving an extremely rigid structure and so maintaining capacities constant.

RMX Insulators, with insulators and main frame out of the field of the condensers.

Collector Brushes with corona shield, and in consequence no RF is carried through the bearings.

Long front bearing, giving absolute freedom from slackness and perfectly smooth action.

Ball-bearing rear end.

Maximum possible flash-over clearance everywhere.

On the 10,000-volt peak model all plates have rounded and buffed edges. Definitely, these are the finest condensers available in the world to-day.

There are rumours in amateur circles that **R. H. Cunningham and Co.** contemplate importing something entirely new in the way of **Bassett** rotary and co-axial antenna equipment, complete with matching transformers.

Murdoch's, in Park Street, have a fine range of small air trimmers, ranging in size from 5 plates upwards. These trimmers will fit inside a coil former for individually trimming coils. They have white trolitul insulation and are locally made.

28—56 MC Notes

By A. Pritchard, VK3CP.

The band is beginning to show plenty of life again, although conditions are rather patchy at present. Considering the strength of the Europeans on 20 meters during the afternoons, we should be hearing them on 10 in the near future. No South Africans have been heard although the K6's contact them fairly easily. Several South Americans have good strength at present and we can expect the northern states of S.A. to come through.

W6PMB tells me he has contacted the following and is telling them to keep a look out for VK's and ZL's — PY4CT, PY3EN, PY2MI, CE3AG, CE3CZ also LU8AB, LU5AN, LU1DJ who are all up the low frequency end. George of VK4JP is giving us very fine signals during short skip and two close spaced rotary beams driven from a rig having a bi-push excitor and HK54 final modulated by a pair of 443's, gives a good account of itself. VK3XP is altering the fed system to a ½ wave coaxial stub and open feeder line. Bassett 64 ohm cable is ideal and used with a 500 ohm line would match a 3 el. job nicely. The imped. of antenna centre multiplied by the imped. of ½ wave section, gives necessary impedance of open line to use. Arch. of 3BW and Geoff. of 3DA have been testing on 56 mc and as it is approximately 25 miles across the Bay, this should be a good distance for tests. 3DA and 3YL have perfect signals. 3GG has xtal, from a 6N7 10 mx xtal, 807 doub., 801's PA, excellent stability and quality. 3JO puts the R meter hard over. An interesting antenna used by W6FZC, having 8 ½ waves, is of the barrage type. The following dimensions halved would be ideal on 56 mc. The general shape is similar to a pair of lazy H types in line with the feeders connecting to the transposed feeder between each. The following are the sizes — vertical 17 ft. wire connecting to horizontal 8ft. 6in. sections above and below, next 17 ft. sections with vert. transposed feeders between another pair of 17 ft. sections and 8 ft. 6 in. sections with more transposed feeders between each set and the last small section connecting to another vertical 17 ft. wire between ends. The main feeder if connected to a ¼ wave stub, connected to the centre transposed section.

VK3QD is re-building for 10 meters and a pair of HY40's completes the final. W6KYT tells me they are having many Aurora displays there and they co-incide with similar displays seen by ZL4AO. They have disrupted telegraph services in the States and evidently account for the dead band on that date, i.e. 13th Aug. W6KYT was qso'd at last by 3BQ. He is old W6BQR who received Max's report on his 160 metre cw, away back in August '24. This brings to mind the first Aust. — U.S.A. and European — Aust. contacts, by A3BQ and W6AHP and G2OD respectively, both in November of the same year.

3YH is completely re-building too, 42 co 40x, 6L6 doub., T40 PA — 6C6 (tri) 76, 42 (tri) 6L6 g's modulator. Fred is winding his own universal mod. trans. from May '38 Radio (U S). K6PLZ teaches Radio-Physics and Chem. at the local high school, so can really talk about ants. and calculations. Tommy makes an interesting contact. VK7AB is in great demand in the States, as Tasmania is considered a separate country. A 135 ft. long wire ant. with centre feed tuned feeders will soon be replaced with a 4 element rotary for 10.

The following give some variety at present — VP3CO, VP6YB, PK6XX, TI2FG, K5AT, K4FOW. Let us hope we can add a few Europeans to the list in the near future. The contest has taken the interest of many, although 10 has not given any help. Many who have tried more than the 3 elements have found they put a better average signal over with the 3 element outfit, evidently the angle of radiation is too definite for the greatest number of stations at such varying distances.

Contest Section

R. E. Jones, VK3RJ, Federal Contest Manager.

REMINDERS.

The VK-ZL 160 metre CW Contest takes place on September 2nd. Full details were published in the June issue of "Amateur Radio."

The All Band VK CW Trophy, commences on 16th September, and concludes on September 24th. Rules appear in the August issue of this journal.

1939 VK-ZL DX CONTEST.

During 1939 New Zealand is celebrating her 100th Birthday, and the New Zealand Association of Radio Transmitters, Inc., co-operating with the Wireless Institute of Australia, will organise and control the VK-ZL Contest as part of the Centennial Celebrations.

The Contest is divided into three sections, viz., Senior Transmitting, Junior Transmitting, and Receiving. The Senior Section embraces a power limit of 150 watts input to the Final Stage. The Junior Section is limited to 25 watts input to the Final Stage, and this limitation is an endeavour to cater for the interests of the QRP enthusiast.

Six valuable trophies have been provided and will be awarded as follows:—

(1) One trophy to each of the following winners of the various divisions of the VK-ZL Contest: (These four awards will be won outright).

(a) Station in VK or ZL scoring the greatest number of points in the Senior division.

(b) Station in VK or ZL scoring the greatest number of points in the Junior division.

(c) Station outside of VK or ZL scoring the greatest number of points in the Senior division.

(d) Station outside of VK or ZL scoring the greatest number of points in the Junior division.

(2) Two handsome silver cups known as "The N.Z. Centennial Cups" will be awarded as follows:—

(a) To the station in VK or ZL amassing the greatest total of points as set out in Rule 15 of "N.Z. Centennial Cups."

(b) To the station outside VK or ZL amassing the greatest total of points as set out in Rule 15 of "N.Z. Centennial Cups."

The two N.Z. Centennial Cups will be held only for twelve months by the winners, whose names will be engraved thereon. Winners will receive miniatures for retention after handing the Cups back to the Contest Committee.

In addition, Certificates will be awarded to the highest scoring stations in each country. In making these awards, each W, G, VE, VK and ZL prefix will rank as separate countries. In order to obtain a certificate, it is necessary for the contestant's score to exceed 400 points.

The awards for the receiving contest will take the form of certificates, and will be awarded to the highest scoring stations in each country.

A plea is made to all participants to send in a log, irrespective of the number of contacts made. As an inducement, a special verification card will be sent to all amateurs who send in a log.

RULES.—SENIOR TRANSMITTING CONTEST.

1. The New Zealand Association of Radio Transmitters Inc. Contest Committee shall be the sole adjudicators and their ruling will be binding in cases of dispute.

2. The nature of the contest requires the world to contact VK and ZL. Six cypher serials are to be exchanged. The first three characters to be the RST of the station received and the last three the number of the QSO. For example, ZL3AZ may be in contact with G6CL and would send 579072. That would mean that ZL3AZ was receiving G6CL at RST 579 and that G6CL was ZL3AZ's 72nd QSO in the contest.

3. The contest is to be held from 1200 GMT Saturday, 30th September, 1939, to 1200 GMT October 1st, 1939, and repeated over the same time period during the next weekend, namely 1200 GMT Saturday, 7th October, to 1200 GMT Sunday, 8th October, 1939.

4. The contest is open to all licensed transmitting amateurs throughout the world. Unlicensed ship and expedition stations are not permitted to enter the contest.

5. Power input to the Final Stage is limited to 150 watts. Where the national regulations of any country

do not permit the use of this power, participants in that country must not exceed the power allowed them by the said national regulations.

6. Only one contact with a specific station on each of the bands will be permitted during the contest.

7. All amateur frequency bands may be used.

8. Only one operator is allowed to work any station. Where more than one operator has worked a station, individual logs must be forwarded under the call sign of each operator, and each operator will be considered a separate competitor.

9. **Scoring.**—12 points will be scored by the first contact with a station outside VK-ZL, 11 points for the second and 10 points for the third, and so on until the twelfth will score 1 point. Thus the first twelve contacts will score 78 points and each additional contact after the twelfth contact will count one point. In all cases contacts are irrespective of the band used. This will apply to all countries except England and the United States of America; in these countries twelve or more (as above) contacts will be permitted with stations having the following prefixes: G2, 3, 4, 5, 6, 8, GI, GW and GM, and W1, 2, 3, 4, 5, 6, 7, 8, 9. The points by contacts in the above manner will be added together and multiplied by the total number of countries worked on all bands, which will give the final score. Each W and G district will not constitute a separate multiplier. It should be noted that where say 10 countries are worked on one band and the same 10 on another band, this constitutes a multiplier of 20.

10. **Scoring by competitors beyond VK-ZL.** 50 points will be scored for the first contact with a VK-ZL zone, 45 for the second, 40 for the third and so on in steps of five points until the tenth station worked in that zone will count five points. Thus the first ten stations worked in any particular zone will score 275 points. Thereafter, each additional station worked in that zone will count five points. The points scored in the above manner will be added and the total multiplied by the total number of prefix zones worked on all bands.

in the third edition of the "Radiotron Designer's Handbook.")

The audio stage of early radio receivers used triode valves coupled by means of interstage transformers, which usually had a step-up ratio of the orders 1 : 3, or 1 : 5. Such transformers in themselves afforded useful gain, but for the most part were of relatively poor design resulting in poor quality reproduction.

With a typical general purpose triode valve, the stage gain increases rapidly as the plate load resistance is increased until this approaches a value of approximately five times the plate resistance of the valve. Increasing the load above this value then produces very little increase in stage gain.

When the plate load of a triode valve consists of the primary winding of an unloaded audio transformer, it is important that the inductive reactance of the valve at the lowest frequency, which it is desired to reproduce without serious attenuation.

For a typical general purpose triode, having a plate resistance of 10,000 ohms, the primary should have an effective inductance of not less than 20 henries. The average inductance of early transformers under working conditions was considerably less than this, and the brass correspondingly poor.

The inductance of a transformer (or choke) is dependent on three main factors:—

(a) The number of primary turns.
(b) The core material.
(c) The amount of direct current flowing through the windings.

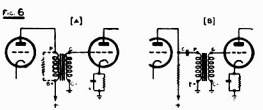
It is not practicable to continue indefinitely the addition of turns to the primary and secondary in order to obtain a higher primary inductance. As the number of turns is increased, the distributed capacitance across the windings also increases, and what is gained in bass response is liable to be lost in high-frequency response, due to the added capacitance effects. In many modern transformers the windings are wound in separate sections and arranged in such a way as to minimise distributed capacitance.

The "Permeability" of the core material has also a marked effect on the inductance of a transformer, and is, therefore, also an important factor to be considered in the design.

When direct current flows through one of the windings, it produces a uni-directional magnetic flux in the core material, which reduces the effective primary inductance. The use of a butt joint, or air gap in the magnetic circuit minimises but does not obviate this effect. One well-known make of transformer has, in the absence of magnetising current, an inductance of 260 henries, which however falls to 80 henries at the full-rated primary current of 10 milliamps.

The plate current may be isolated from the primary windings by shunt-feeding the valve. Fig. 6 illustrates (A) the conventional, and (B) the shunt-feed method of connection. With the latter arrangement, the

Fig. 6



operating conditions of the valve are quite different to those in the conventional circuit, and the output voltage available from the stage is much smaller. In cases where lower output voltages can be tolerated and the shunt-feed connection used, the resulting increased inductance usually enables better frequency response to be obtained. Under these conditions, the coupling condenser

W, VE, VK and ZL districts are to be considered separate countries when these awards are made. The only proviso to these awards is that a contestant score at least 400 points.

The two "N.Z. Centennial Cups" will be awarded as set out heretofore. These are two handsome silver cups and winning one of them will be indeed a great achievement.

Each participant who forwards a log will receive a verification card of New Zealand's Centennial Celebrations and Souvenir of the 1939 VK-ZL Contest.

SPECIMEN LOG SHEET.

Name ..... **Call** .....

Address .....

Transmitter ..... **Input to final** .....

Aerial ..... **Receiver** .....

Bands Worked ..... **Number Countries Worked** .....

Date	Time (GMT)	Freq. Band	Station Worked	Serial Sent	Numbers Received	Contest Points	Cup Points

Federal and Victorian QSL Bureau

R. E. Jones, VK3RJ, Federal QSL Manager.

QSL's for Bulgaria should be sent care of HB9CE, Swiss Shortwave Radio, Zurich, Badenerstr, 68, Switzerland.

Harry White, VK3IR, has just returned from an interesting two months' trip to Malaya.

KH6KKR, situate in Samoa, has just got on the air with a T9 signal on 14350 KC.

The CW receiving contest, held at the August meeting of the Key Section of the Victorian Division, created great interest. Foremost in the speed section was VK3CX, whilst cypher at 25 w.p.m. was no trouble to VK3XS.

G2VZ, of Bexley, Kent, England, is desirous of VK contacts on 14 mc.

Another old timer to take unto himself a wife, is VK3BZ. All congrats and good hunting to you both, Morrie.

VK3GP awaits cards from two countries before submitting his application for membership in the DX Century Club.

VR4AD has been transferred to Ocean Island, and will shortly be on air under VR1 call. He promises to bring his VR4 QSL's up to date in due course.

DX NOTES FROM VK

Extract from "The Ohio State Journal"—

Our very good friend at VK3ME, Don Gilder, sent us some radio magazines from Australia, one of them being the ham's guide-book, "Amateur Radio," probably corresponding here in the United States to "QST." We're going to quote from the June, 1939, issue some interesting DX notes.

Foreign papers please copy. HI.

DX Notes

By VK3MR.

My humble contribution to last month's issue, unfortunately, was classified as "Too late for publication."

Judging by the enquiries received, it is gratifying to know that somebody at least looks over the headings, and to all my fans, I thank you: both of you!

Conditions during the winter have been very poor and more than lived up to its reputation of being a dull period for dx, but there are noticeable signs of improvement, and should be up to scratch for the big battle during October. During the evenings, quite a few of the VS7, VQ8 and VU gang are coming through, which is a good sign, although there seems to be a complete absence of any signals after 11 p.m. on 20 mx, and much the same for 40. This band is not what it used to be, way back in '32! 7 mc was the only band used for the ARRL test, and 14 mc was a complete wash out except when the G's came through sometimes about 10 p.m., and lasted on rare occasions, for 2 hours, and during the afternoons there were no sign of any W's. What a treat. Those were the daze! An interesting QSO between VK3QZ and K7GOR (7005 kc) about 9 p.m. disclosed some very interesting things, one to the effect that the K7 had to use iron cored copper wire for his antenna as the ice formed up to an inch thick! Graham has now worked nine countries, and has only 60 more to catch up to his only rival, 3BM, who is now on CW. Believe it or not!

W6RJJ ex 4JP used a portable 800 watt rig fone and cw. Ed keys with one hand and devours hamburgers from the other, which has a tendency to make his fist less qsa. He wants to sell his neighbors vacuum cleaner cheap! 3VU is back from VK5 after painting the town red, and is trying to burn up my RF tube with a pair of T40's in PP. I have a special receiver tuned to his frequency, using diode rectifier which feeds the resultant dc, hum and all, into a spare 2 mike 5000-V. condenser, same to returned at a later date when the opportunity arrives. I am sure Jack would like to handle such a condenser.

DASD CONTEST. This years test is not enjoying the popularity of previous years and conditions are very patchy. The general type of European note is verging on Near DC and only a few real T9's can be heard. The G's, well known in the past for their extra pure signals, have now taken a leaf from the rock crushers in the States, but fortunately they use low power. I'm sure Uncle Tom will have a headache. Conditions during the third week were very poor and seemed to come up for a few minutes and go off again. I spent from 3 a.m. to 8 a.m. calling solid without a single contact, although I could hear every country in Europe. 'Tis one of the penalties of having a good receiver, or is it a poor ant? I usually can work what I hear . . . sometimes . . . During Sunday afternoon from 3 to 6 conditions were fair, but not a sign of any D's, only the usual Europeans, with a few extra LY's. There will be some QTC's exchanged before the test is over. After wasting KW's at the high frequency end, I tuned down amongst the fone hash, and heard a G on fone giving VK2KS an R7 report! Later, 6.30 local time, the ZL's started to work them, and as far as I could gather, no VK3's had any luck. No out band operation was noticed this year. Which reminds me of a well-known American receiver manufacturer who advises all and sundry, that their receivers will cover those rare few Kc's above 14,400 kc, where foreign stations work. Let me have some of the best scorers for this test by the 16th. VK2ADE seems to be going flat out as usual and working plenty. 3DP and 3JE are the most consistantly called Victorian stations and 3VF had his share Sunday afternoon after a fruitless early morn session. Best of luck in the October contest gang. 73's. Three Emma R.

Divisional Notes

To ensure insertion all copy must be in the hands of the Editor not later than the 18th of the month preceding publication.

N.S.W. Division.

President: H. F. PETERSON (VK2HP)

Vice-Presidents:
F. A. CARRUTHERS (VK2PF).
W. G. RYAN (VK2TI).

Secretary: C T. HORNE (VK2AIK).

Treasurer: H. D. ACKLING (VK2PX).

Notes Editor for this Division:
J. H. FRASER (VK2AFJ).

KEEP THESE DATES FREE.

Thursday, September 7th—Mr. Ross Trehearne, on "Some Interesting Phases of U.H.F. Work."

Saturday & Sunday, September 9th & 10th —Northern Convention at Newcastle. See separate paragraph

Thursday, September 21st.—General Meeting.

Thursday, October 5th.—U.H.F. Meeting.

And some time in November—The ANNUAL DINNER. Full details next issue.

JULY GENERAL MEETING.

A lecture by Mr. Don Connolly had been arranged for this meeting. Ar he was unable to attend, Mr Harold Ackling, VK2PX, who is an instructor under the Air Raids Precautions scheme, lectured on "Gas." The president was in the chair, and welcomed a few visitors, including a Mr. Backus, from the U.S.A., who has friends on the air over there.

Mr. W. Moore moved a vote of thanks to Mr. Ackling, and passed the opinion that although the lecture had been something out of the ordinary from the W.I.A. point of view, it had nevertheless been quite interesting and instructive. Mr Gayen supported Mr. Moore and said that the lecturer was to be complimented on giving such a fine lecture at such short notice. The meeting closed at 10.30 p.m.

AUGUST U.H.F. MEETING.

The third meeting of the U.H.F. Section of this division was held on August 3rd The president, Mr. D. B. Knock was in the chair. Eighteen members and two visitors, Messrs. Zech (2ACP), and Wilson, were present.

A letter from ZL4HM, operator on the Union Coy's. S. S. Kairanga, was received, offering to co-operate with the section in any forthcoming sea-going tests on 56mc between VK and ZL. This matter will be taken up in the summer.

2TI reminded those present that they could come to the General Meetings of the Institute, as they were really members of that body of which the U.H.F. was a special department.

A suggestion was made by Mr. W. Moore and dealt with the need for the establishment of a relay chain of 56mc stations covering an area from Newcastle to Wollongong. Experience shows that such a chain would be a practical possibility if stations will co-operate, and the chain could be extended much further, taking in the Blue Mountains, Bathurst, Orange and Singleton.

In view of the success in relays on 56mc transmissions recently undertaken by 2NO and 2IQ, It was decided to communicate with Victorian U.H.F. Section, suggesting by the use of 80 or 40 metres, round table conference could be arranged between the two States, with two key stations relaying local 56 mc. transmissions. Such communication would arouse considerable interest for U.H.F. men and observers on the other bands.

The weekly roster of Sydney 56mc stations for nightly transmissions is maintained with the exception that 2NO and 2VN have changed nights, thus 2NO will be operating on a Tuesday and 2VN on a Wednesday night.

The important business of the evening was a lecture by the guest speaker, Mr. E. Fanker, 2HS. Mr. Fanker has written a paper on his lecture, which is to be published shortly. The lecturer complimented the W.I.A. on re-organising the U.H.F. Section, and would add that there is unlimited opportunity in the five metre band for local contacts. He also said that population of this band is everything and by using it for local contacts, much would be done to help the experimenter along.

"Finally there is unlimited scope for experimenting with beam antennae on this band, especially is there scope for learning the fundamental principles of all types of antennae because of their small size and relatively small cost."

Judging by the amount of discussion afterwards it would appear that Mr. Fanker raised quite a few interesting points. Most of those present entered into the discussion, and Mr. W. Moore (2HZ), moved a vote of thanks, which Mr Trehearne (2IQ) supported. Both thanked Mr. Fanker for coming along and said that he had cleared up quite a few points for them. The meeting closed at 10.30 p.m.

FROM THE ZONE EDITOR.

September is going to be a busy month for most of us. The all band contest will take place towards the end of the month, and the rules were published in full in August "A.R." Even if you can operate on only one band ("One man band"), join in the fun and give the other chap a cypher. VK2 should win the trophy this

year, with a bit of luck. Also I would like to see some VK9 chaps in the test on some bands at least.

I commend the advertisers to your consideration Remember they help the magazine along, and those that have advertised this month should fill your every requirement. Don't forget to mention, "Amateur Radio," when you write to them, and if you are a regular customer, well tell them that you saw their ad. in the magazine.

For the American WAS aspirants, W6KWA told me in a very recent QSO that he will be operating portable in Nevada during the first and second weeks of September. He is going on a six weeks holiday (they call it vacation) and will be on a ranch in Nevada for ten days.

W6QQL, Nevada is quite active just lately again He QSL's OK, for I have his card. So does W3DUK in Delaware.

I would remind those who contribute notes, that I must have them by the 12th of the month. No notes received from Manly or Lakemba Clubs this month.

2TF seems to be doing quite well in the D.J.D.C. Conditions were quite good on the first week-end, but did not seem so good during the second week-end.

2CP was getting ready for the VK-ZL 80mx phone test early this month only to discover that it was all over. Wake-up Ormie, if you were to read A.R. you would have saved yourself all the trouble.

Many old timers are back on 80mx, amongst some old ones are 2HC, 2NO, 2CI and 2VU.

2NO reports having heard a very fine signal from 2AGU on 5mx the other Sunday night. Keep up the good work, Ken and Harry.

Very interesting duplex transmissions are taking place on 5mx and 80 mx at 2IQ's place and also at 2NO's. Don transmits on 5 mx, Ross picks him up and rebroadcasts him on 80 mx, and Don listens for QSO's on 80 mx. The other night the reverse was done on 5mx in ZL, and Don had a duplex talk with a guy on 5mx over there. For the chap who likes something out of the ordinary, that's something for him to engage his attention with. 73 Jack

NORTHERN CONVENTION.

The Northern Convention of the Institute will take place on the wek-end, September 9th and 10th. Hams from all over Newcastle and Districts will be there. The Saturday will be taken up with a dinner and business session, while on the Sunday there will be a real old style Hamfest and competitions are being organised. Prizes to the value of twenty-five guineas have been donated.

The Committee, which consists of 2KB, 2ZC, 2CS, 2YL, and 2KZ, are working hard. Any information re various expenses, etc., may be had from 2ZC and 2KZ, in the coalfields, and 2YL will provide any information for the Newcastle boys Any Sydney Ham will be very welcome and will be assured of spending a most enjoyable week-end. Those interested should ring 2TI (FX 3305), or get in touch with Bill Moore as soon as possible. Transport is being arranged for those who get in early. It is reliably stated that the maximum cost of the whole week-end will be not more then 30/-, and this includes paying one's own travelling expenses and overnight board.

Roll up boys and don't forget the prizes. Drive up on the Sunday if you can't make it for the whole week-end. We will be meeting at Toronto at noon.

"SWITCH TO SAFETY."

A series of three instructional lectures on "Resuscitation from Electrical Shock," has been arranged by this Division. Our worthy friend, Mr. Harold Ackling, VK2PX has kindly consented to take charge of these classes.

The lecture precedes the Monthly General Meeting. The first class was held on August 17th, and the next one will be on September 21st All those interested are requested to be in attendance by 7 40 p.m. on the nights of the classes.

If the support to the initial classes warrants it they will be continued for a further term. Now this is an important subject, hams, so roll up and bring any visitors who may be interested.

OFFICIAL BROADCASTS.

This Division's Official Broadcasting Station (VK2WI), transmits every Sunday at 1100 E.S.T. on 7180 to 7200 kc. The latest news on the activities of the Division as well as general news is broadcast. The transmission is rebroadcast on 56mc. by 2IQ. Attempts are also made to relay the transmission of other bands depending on prevailing conditions Reports on the reception of these stations would be very welcome to all concerned, and a card sent to P.O. Box 1734 JJ, Sydney, will be passed on to the parties concerned, and acknowledged in the usual way. However, all stations concerned stand by for QSO's afterwards, so stand by for them, and the official stations will elaborate on any points that may not be quite clear.

COALFIELDS AND DISTRICT.

2KZ REGISTRAR.

2YO has just completed lining his shack to make things a bit more comfortable. Is exclusively on 14mc. now, but is building a 3.5 mc rig XYL and himself will be at the Convention. 2XT is heard occasionally on 20mx., but has not erected a decent antenna yet. I would like to hear from 2KE, and hear you on the air again. I hope you will be at the Convention along with the XYL. 2KZ is quite active on 20mc, and has phone going aften ten years of CW. Is kept busy at the moment handling news along with 2YL re the Convention. The XYL will be there. So will 2DG and his XYL. 2DG is busy rebuilding the following line up: 42 807, 808; plus some phone gear, which looks very nice in a rack and panel. 2YL is up to his neck in it, erecting beam antennas, as well rebuilding to the following tune 6L6, 807, 809. His phone has nice quality. Will he be at the Convention? I ask you. 2 PZ and the YL are off to the Convention, which is rapidly becoming the topic of the day. He is always very pleased to see any of the boys. 2CW is on 40mx now but unfortunately will not be able to get down to the convention. Bad luck OM, but I hope to see you soon. All I know about 2CX and 2ACG is that they are both going to Newcastle for the Convention. They paid for their tickets one month in advance. I'll bet they are looking forward to meeting the W.I.A. boys. I guess 2XQ has a new rock because I heard him on 14000kc one day.

The convention is being held at Newcastle, and there will be approximately 15 hams from the coalfields there, but see a separate article for full details. I almost forgot to tell you that 2XT will be there also. So till the 9th, 73 Max.

ALBURY DISTRICT.

2IG Registrar.

Conditions are certainly a variable factor at present down here and most bands are pretty dead for about 18 hours a day

2OJ still on fone on two bands but has trouble with filament transformers. 2EU pounds out on forty like a ton of bricks and reports an HK on fone there. Hasn't raised him yet tho. Here's hoping, Arty. 2JA too busy with service work but threatens to get on the air before long. 2AP blew the dust off the rx and was surprised to hear the W fones coming in well. That means Arthur won't be long off now.

2VK, 2QE and 2QD are the silent key men, almost too busy doing nothing. 2IG is pleased at working G15WD on 20m for BERTA, but not much DX about. A new arrival to Albury is Eric Martin, late of Euston and hopes to have the rig going soon. 2OE is reasonably busy on all bands and raises some stray DX on both fone and CW.

2DO—Believe he is on twenty, but no news. 2ALS ex 2CW of about ten years ago, is back again and is only using about 4 watts, but getting some good reports at that. Welcome back OM

2AKE is making a few changes and should have some fone going by now. Gets over to ZL on 80m with 2 watts. Very fine work, Jim. I want to thank 2AKE for his information, and I hope that some of the other hams will get busy too. Now, come on fellows, what about it? 73 Reg.

WAVERLEY RADIO CLUB, 2BV.

These winter nights one would expect attendance to fall off, but to the contrary, during the last month, members including several new ones, could have been seen emerging from mufflers and coats and fighting for the spot nearest the radiator.

During the months a "junk" sale ("junk" in name only), was held. The unsought position of auctioneer fell on to the shoulders of Leo Walters and such was his persuasive power that the pile of valves, at one stage transferred from him to the members, their cash travelling in the opposite direction.

The following Tuesday, Jack Howes, 2ABS, enlightened us on the intricacies of Ohm's Law and gave us model answers to questions from old A.O.P.C. Papers. We hear that more are to follow.

The remaining meeting nights were spent in discussing the details of the field day which was held at National Park on July 30th. Blessed with such a perfect day it couldn't have been other than a success. 2BV with its usual power, received an R8 report from 2YL at Cessnock and also contacted 2AFZ and 2TN the other two transmitters on the field.

2AFZ located at the cliffs overlooking Garie Bay, worked a station 400 miles away. This was hardly to be wondered at, because the sigs. started from such an advantageous elevation.

In conclusion, a warm welcome is extended to anyone interested in radio to visit the clubrooms, at the rear of 13 Macpherson Street, Waverley, on any Tuesday night.

Victorian Division.

KEY SECTION NOTES.

BY VK3CX.

FLASH! FLASH! No, it's not a war—'twas the opening of proceedings at the August K.P.S. meeting, when a photographer, unable to restrain his desire for beautiful subjects, attended and took two photographs of the gang. QW in the chair, opened the meeting with praise for the new mag., and I'm sure the printer's ears were burn'ng as everybody was greatly in favour of it.

The rest of the evening then followed, when the lads' minds all went back to their early struggles with code RJ had rigged up an automatic sender and gave the lads a chance to show their abilities on speeds ranging from 15 to 40 words per., but most dropped out when 20 was reached. All enjoyed themselves, even if it was only by watching the look on the faces of some phone members present. Highlight of the night was the whoop of joy from KN when he succeeded in copying three whole words at 20 per. KN had brought along an HQ120 receiver to demonstrate but by the time we got around to it some twerp had locked the door of the TX room and we had no AC to run it and had to content ourselves with looking at it.

Warning: Dont build a rotary—IG is suffering from a stiff neck as a result of watching his on a 90ft. tower.

BQ, however, is going ahead with a close spaced 6 element beam and in his spare time makes 1600 kc. I.Fs.

XM has a marvellous rig—he hasn't been on the air for 2 months and yet he got a note from the R.I. He even hears strange noises in his own BC set, so here's a chance for some amateur detectives to gain fame. RN can give them a job too, as he has lost his grid-drive, finder please return, usual reward. Talking of being off the air, look who's back—KN, working 14mc. phone, after an absence of 5½ years. His phone sounded better than a lot of those who had been on for years.

The air round Caulfield has always been thick and when RX recently moved there the gang threatened to drown him if he went on the air. When last seen Cedric was taking swimming lessons and warming up his pair of 199's. He was heard to orate, "Huh, I'll moider dose guys, I'll mow 'em down." The activity of WL has effectively silenced RJ as WL is only 20 yards away. Ray has been forced to sneak in QSOs when WL is not home. CX sends deepest sympathy as he has UE next door and TV situated 150 yards away. Wow!

The Woolworths gang (5 and 10 to the uninitiated), are still active, JO, DA and ZU keeping 5 alive and CP, CZ, YP, and BQ making lots of noise on 10 but not enough to keep IK charmed. He has plug-in coils for 5 bands and tries to work them all, but by the time he has changed all his coils he hasn't enough time to spare for a QSO. VW and CX had a long yarn with 5AB in Darwin—their best DX for the month, and speaking of strange localities, QK will be on the air in October with a portable rig at Churchill Island—there's no need to get out your Atlas, it's in Westernport Bay

Divisional Treasurer NY is busy chasing subs but Key Secretary UM spends most of his time these nights sitting over the fire, saving his strength for the All-band contest. WJ complains of the lack of DX on 7mc. and all that gang on 14mc. do the same in regard to that band.

PHONE SECTION.

By J C. KERLEY.

Next Section Meeting.—Tues. 26th Sept.
Chairman—Ivor Morgan (3DH).
Hon. Secretary—J. C. Kerley.
Hon. Asst. Sec.—H. Simmonds.

Another year began for this section on the 25th July when we held our Annual Meeting in conjunction with the Annual Meeting of the Victorian Division of the Institute. I think that the idea of holding the Division's Annual Meeting on the same night as that of one of the sections, is one which should be adhered to, as it means a much greater attendance at the meeting and therefore more interest taken in the Institute's general business. The attendance this year was the largest that I have seen.

Our office-bearers for the ensuing year are at the head of these notes. All positions were contested keenly with the exception of "office boy," which was taken by 3LN unopposed. The Allocations Committee remains as before, and consists of myself as Chairman with A. Smith (3UX), T. Dinan, and A. Timmins.

3EN has been putting out an excellent phone sig. recently and was heard on a Sunday not long past working with 3BN and PC.

A suggestion to those who work two or more way phone is that all should use the same frequency, and thereby leave more room on the band. E.C.O. should solve the problem.

The "Three Musketeers," Ted, Ivor, and Howard, of 3VM, 3DH, and 3KU, respectively were heard in a fourway with "Molly" WLOM recently. Which reminds me. Has anyone heard Ivor's record yet? If not, get on to WIOM anytime now and you probably will. Who said the 200m. band was the publicity band? I'll back 20m. after the other Sunday when the above mentioned record was discussed.

Now I have a grouch. Why do certain SW phone stations, notably VK2s, tend to run a mothercraft session or send greetlings by juveniles over the air? Have been listening to a three letter VK2 and hearing how to feed a four months old baby on a bottle, whilst another had a very juvenile voice sending greetings to Auntie Vi. I can get all mothercraft and greetings from the BC stations, so why duplicate the service? If that is all you can discuss, QRT and clear the band a little so that someone else can have a go.

It is rumoured that the recent change in frequency of 7UV was due to 3LN's sigs. So you even get across to Tassie Len. It also means that the heterodyne on your Sunday xmissions has gone.

As Chairman of the Allocations Committee yours truly has gone all high fidelity. Am about to invest in an Oscilloscope Now gang, watch your transmissions, as I am liable to run amuck with the above. If you want to blame anyone for it, have a shot at 3VM.

U.H.F. SECTION NOTES.

By 3JO.

At the time of writing, no details of the results of the competition held on Sunday, August 27th, are to hand, but, as many hams have shown a keen interest in the rules, it is expected to prove successful. If the attendance at the August meeting can be taken as a guide, all intending competitors with one exception, are very busy putting their gear in order and thinking out their various reasons for not being more popular. Too busy, in fact, to spare one night to meet their fellow hams and discuss their experiments and gear, etc.

Under the circumstances, it was not possible to make arrangements for co-operation with the VK2 U.H.F. Section as suggested in a letter from that division, and consideration of this must now be held over until the September meeting on Tueday, 19th.

In Melbourne, 3DA, 3RI, 3GG, 3LG, 3YL, 3YJ and 3JO are doing their bit to keep the band alive, but improvements in some form or another are still required to almost every one of these stations before best results can be had. To date, 3LT has heard 3DA and contacted 3JO, while 3BH has contacted 3LT and 3JO. Signals have been weak and tone modulation has been necessary in all cases to get through.

EASTERN ZONE NOTES

3DG-VG.

3DI—Active on 40 mx, when not qrl, yl and service work, what about putting in an appearance on 80 mx for the zone hook-up Jim? 3HT.—Dud heard trying to get rid of "um" in a modulator unit. Are you sure Bert does not know where the trouble is, Dud, and is laying quiet, seeing you have broken that gentleman's agreement on the fone? Look out when you collect your next lot of qsl's. 3HK.—Keith putting out a fine signal on 80. Been trying a noise suppressor that really works. You had better let the mag have the slope, Keith OM. 3IC, 3SS, 3XH—All been having lots of fun with portables. 3WE.—Bill has gone into temporary retirement-strain of VK-ZL fone contest must have been too much for him. 3IL.—Active on 40 mx so we hear, using qrp 2 watts to a 19. 3VG.—Getting a little dx on 20 mx W's VE, K6, and a F that's just a start, bigger things are to come. 3PR.—Ron on the go with his big vibrator unit but still has to cut down its purr a bit, quality much improved since installation of xtal mike.

3IG.—Last month we reported George as having worked a few more countries than he actually had, sorry om but you will surely soon make that score with the rotary perking as it is. Has replaced T20 with an 809 with better efficiency. 3PG — Heard that help was urgently needed to hoist another of those things that turn around in the air and stand on a tower, not a rotary by ny chance, Bert. Is it right your tower is 100 feet high, Bert? As for 3GO, LY, QB, EA, XZ, HZ, JZ, will have to hold a memorial service for those chaps as they are very quiet, come on fellows, let's know if you are doing anything.

Seeing the cat is out of the bag we may as well tell you that the Eastern Zone now has a YL with a call 3KS and she comes from Buchan, so chaps, be sure and keep an ear open for her, that latter request, no doubt, was not required if we know some of the gang.

WESTERN ZONE

VK3HG.

3GC.—Dick has started up in business in Camperdown. Good luck OM. 3II.—Erected two V beams and pleased with the results On quite a lot on both 3.5 and 7 mc. 3JA.—Not heard lately. Must be rebuilding the receiver. 3KX.—settled in new QTH and working a few on 14 m.c. 3SZ.—Stan has had a spot of BCL trouble on 3.5 and so is missing out on the Bone hookup. Active on 7 mc 3TW.—on 3.5 and so is missing out on the zone morning, but mainly on 7 mc. 3WT.—Now located in Whittington and has at long last raised that elusive DX. 3WW Heard and called one night on 3.5 mc. but he could not have had any receiver as he could not be raised. 3XG.—One of the regulars on Sunday morning. Schedules and getting some DX on 14 mc too 3OW.—Improved his V beams and getting some nice DX on 14 mc phone. 3HG.—Having trouble to get the new antenna system working satisfactorily. Still requires three countries for the century but cannot raise them, although hearing plenty.

Plans for our second convention are under way. Tentative date is third week-end in November, and the present indications point to Camperdown as being the most suitable town.

Queensland Division.

The August meeting, held at the usual rendezvous in George St., City, was attended by a fair number of the gang. A visitor present was Mr. McLeod, VK2ADC, ex 3ZZ, who happened to be visiting Brisbane in H.M.A.S. Swan. We had the pleasure of listening to a very well presented lecture by Mr. K. Price, 4KF, who chose for his subject, "DC Motors." Refreshments were provided after the meeting, this being quite a unique event, but one which proved popular.

About 30 hams visited the Courier Mail and broadcasting station, 4BK, and saw the production of a modern news- and broadcasting station, 4BK, and saw paper from start to finish. The speed with which a complete newspaper is printed, folded, etc., was a source of amazement to most of those present.

The 56 mc gang have a ragchew across town each Sunday night, and incidentally if any of the local gang have 5 metre gear and are keeping the fact dark, please put the boys wise as a station was heard on CW calling "CK 5 metres." Unfortunately, the call sign was not heard and speculation was wide and varied concerning the identity of this station. The time was approximately 9.10 p.m. 4HR has built up the "2JU" 5 metre converter and its success is such that several other hams intend giving it a tryout. An amusing incident occurred on a recent Sunday morning when a few of the boys were trying out portable gear on a local hilltop. Despite all the operators' attempts the RF could not be induced into the skywire until a few of the local small fry were cleared off. We worked out that the absorption was about 2 watts per boy—hi!

Mr. Thorley, 4RT, who has very efficiently filled the position of secretary for the Queensland Division for the past two years, has reluctantly been forced to relinquish the post, for business and family reasons. Mr. MacGregor, 4ZU, was elected as Secretary, and if the support afforded John continues the Institute should continue to forge ahead.

PERSONAL PARS.

4GG, of Chinchilla, been transferred to Innisfail. George has been known as the "Old Iron Horse," in ham radio for years and had given it wide publicity in his home town.

4RT.—We should see John a little more active now that he's no longer secretary

4RY.—Bill mainly on 56 mc., but doing a little on the other bands. Landed that 100th country yet Bill?

4AX.—way up in Cairns, heard occasionally.

4UR.—Maintaining h's reputation as No. 1 CW DX man in VK4. Also very pleased about a few more cards recently received.

4UU.—Bill not very active but fills the position of treasurer very well and also is QSL manager.

4ES —Late of Bundaberg, concentrating on 40 mx at the moment. Contemplating a new super and as the present one has 10 tubes the next one should be worth having.

4DY.—Eric has some nice gear, but doesn't find the time to get on the air much. Also runs the library.

4FJ.—Roy very gratified at the response from the zone managers, but would like to see more yet.

4EL.—Now has 114 countries, 97 of which are verified. Looks like another VK for the century club.

4FN.—Been transferred to 4RK, Rockhampton Congratulations, Frank.

4FL.—Worked HK5EA on 40 mx. fone, got an R7 report too. Nice work, Frank.

4OK.—Using 6v6g tritet with about 4 watts from a genemotor. Use a Jones M.I. antenna and work dx like a QRO merchant.

4RF.—Heard on 20 mx using series modulated fone. Uses 616g final and a 45 as modulator

4NO.—Norm has changed his QTH to Chertres Towers.

4UX.—Claude quite settled down in Bundaberg.

4SN.—Spending holidays in Brisbane and visiting a few local shacks.

South Australian Division.

By VK5RN.

A council meeting was held on August the 2nd., when still more membership applications were dealt with. On Wednesday, August 16th, a general meeting is being held, when Mr. Frank O'Grady will give a lecture on modulation. This is a very popular subject, and a large attendance is expected. Judging by the crowd at last month's meeting, the new system of having lectures, and not discussing business at general meetings is working most successfully.

With summer approaching conditions have been improving on the higher frequencies during the evenings, 40 metres has been far more alive and occasionally 20 metres has provided thrills in the way of DX, but both bands have been very erratic here, although during the afternoons Europeans have been plentiful.

On the other hand 80 metres has been very reliable and is usually full of VK and ZL fone in the evenings, especially on Sundays. At 10.30 a.m. on Sunday evenings a few locals get together on this band and have a multi-way QSO, when it's not too cold for them, so who about joining in? —especially country hams.

The 80 mx fone contest is now over, and it appears to have been very successful, so if you haven't already sent in your log, don't delay.

I must confess that I know nothing about 5 metres or 10 metres, as I haven't a receiver for these bands yet, but I believe that 5 metres has been very quiet indeed. so why not use this band more for local contacts as stabilised oscillators are cheap and easy to build, and it would relieve some of the QRM on 40 metres on Sunday mornings and give some of the lower powered country hams a chance to make their signals heard in the city.

For the benefit of those who didn't hear 5FM's Country Session on Sunday, 13th August. Would all zone officers who are members of the new society please continue in their old capacity, if they wish to do so, because they are best fitted for the job, having had so much previous experience.

After September 1st we are going to have trouble in the 7200-7300 kc. region of our 40 metre band, from European commercial stations, so those who have an E.C. oscillator or a crystal in this section of the band are urged to occupy this valable range of frequencies.

A rare country. — Amateur radio has restarted in Spain, as EA7BA is audible here about 6.00 p.m. S.A. time, and puts in a nice signal on the L.F. end of the 20 metre band on fone and some of the local chaps have contacted him, it is reported that he QSL's. His address is in all old call books.

Members are reminded that the institute will handle QSL cards for a halfpenny a card, and if you are a dx hound this fact alone will save you more than your subscriptions cost you in a year, so don't fail to use this service, and if you are not a member of the Institute don't hesitate to join up and you will find it well worth while.

Western Australian Division

By VK6WZ.

Division meets on second Tuesday each month at 8 p.m.

August meeting was one of good attendance with host 6BB and deputy 6RU well to the fore. 6MM (now in the city and hoping to get on the air from Shenton Park), 6LS (a new full member), and 6IZ (ex 3IZ), were present and were welcomed in the approved fashion. Business included a letter from the Minister for Customs on the case for abolition of duties on communications type receivers imported for experimental work. It seems that the Australian radio industry would suffer a crushing blow were these receivers to be allowed in duty free. The Minister further pointed out that two Australian firms were prepared to make such sets if orders for ten or twelve were forthcoming. It's nice to know that the local industry is capable of swotting up in a few weeks what Eddystone, Hallicrafters, National RME and others have taken years to learn! The meeting was informed that one Perth firm has called the bluff and ordered a batch of receivers on condition they are up to overseas standard.

Field day committee advised that they plan a field day for the third Sunday in each month. U.H.F. section put forward suggestions among which was one for a home QSO day for five-metre cw. This move should stir up the completion of receivers capable of copying telegraphy on that band.

A move is to be made for the formation of an emergency network in VK6. Organisation is in the hands of traffic manager 6AF and he will welcome suggestions and offers of co-operation, particularly from country hams. The meeting closed and the evening wound up with an auction of surplus 6WI gear at which bidding was good and 6W6, the auctioneer acquitted himself nobly.

The Division moves into new headquarters in C.M.L. Buildings, St. George's Tce., in time for the September meeting. All correspondence should continue to be sent to the private box as given on p. 1 of "A.R."

Undamped waves:—

6MW.—Has A.M. in operation and it hardly seems matter whether he talks to the mike or not—it still modulates fb.

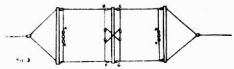
(Continued on page 36).

THE W8JK BEAM.

(Continued from page 17)

A still shorter Array: If there is no room for the array above described, it can be shortened by a few feet.

It should be borne in mind that the aerial proper starts from the points at which the feeders join it—that is, of course, if the wires are cut to the correct length for the frequency used.



If each arm of the array is shortened by say 2ft. the effect will be that the last 1ft. of the feeders will become electrically part of the antenna, and the feeders are correspondingly shortened electrically. Within limits this can be compensated in the shack by use of the aerial tuning condenser.

Still further shortening of the array can be achieved by turning in the ends of the wires without altering their length. Fig. 3 shows how it is done. As there is comparatively little radiation from the terminal parts of the aerial there will not be a very great sacrifice of effeciency.

(To be continued)

There is a young ham in Bengal,
Whose beam is no good at all,
When he turns it on here
His sigs disappear,
I guess his reflector's too small!

—6FL.

(Continued from page 33).

6GB.—Jack has made provision for A.M C but so far no workee. 6CX.—Shares the forty metre band with neighbour 6KO. That's co operation for you! 6TM and 6RB also co-op. Eric has his fone going now and cathode modulates with a single 6F6—no speech amps—just a one-tube modulator. 6MM.—Heard from 6 Beery Wasps during the recent QSO day. Tell Milton's voice anywhere.

6FL.—Frank reports twenty metres on the improve in Geraldton 6LJ.—Sez he's getting back on the air. I wonder? 6AF. —Now has model of Chrysler building in shack. He calls it his rack. Small fortune in aluminium there, too. When do tenders close for installing that lift, Allan? 6BB.—Confessed his vast accumulation of junk had him worried when the National Register came around. 6CP.—Threatening big things with home-wound tranny. Give the powerhouse due warning before switching on, Clarrie. 6GL.—An oldtimer now on the air fairly often from Kojonup. Uses vibrator power and gets 450 volts out of it for his 6P6. Sez the vibe makes fb radiator under those condx 6RW.—Heard on 7mc. recently after long silence. Usual fine quality and good modulation. All from d.c. mains, too. 6LM.—Wiluna man who hopes have some fone working soon. Busy swotting up ways and means for cathode modulation. 6WF.—Back on 7 mc. convinced that eighty mx. would be swell band if only somebody would get up there.

TASMANIAN NOTES.

NORTHERN ZONE by VK7LZ.

To begin with I must apologise for not sending in any notes for the July issue, but "Old Man Flu" decided it wasn't worth while. Conditions down here this winter were if possible, worse than last year and there has been very little activity on any of the bands. However, by the time these notes are printed, we will be all tuned up for the all-band VK CW contest. Our zone in this contest hopes to be more active than ever before with 7AB having a good try and as far as I know 7XL, 7KR, 7DS and myself will all be there trying our best to keep Tasmania on the map.

At least three of the above stations will be using the 1.75, 3.5, 7, 14, and 28 mc bands. Keep a good look-out for us chaps.

7CJ is now back on the air again after about three weeks' spell. What happened, Jack, been rebuilding? 7BQ.—At present putting the finishing touches to a lattice mast so as to get a ten metre rotary beam in action. 7DS been trying in vain to get down on 20 metres for some time now. 7LC at Queenstown tells me he has no time for amateur radio at present as he is too busy keeping 7QT on the air 7XL.—George still having trouble getting his antenna going on 20 but succeeds very well on 40 metres. 7AB.—Still keeping skeds with W6PMB every Sunday on ten metres. 7LZ —Trying to find DX on 40 and 20 without much success. 7RK is now back on the air after a spell in hospital.

If any of the country members are active I would very much like to hear of their activities so as to give them some space in these notes. In conclusion remember our next meeting at the Y.M.C.A. on the **last Thursday** of the month

NEW GUINEA NOTES.

9WL.—Pleased to hear you have found the bug in the xmttr Laurie and the rig has made up its mind to perk on the one freq. By the time these notes are being read Laurie will probably be out on leave and chewing the rag with VK's in their home shacks. Half your luck old son. A new Howard receiver is to be here on his return.

9DK.—Still as hard after the dx as ever I can see Ernie and more power to you. Two new countries fell to the call in VP6 and VP7. The new rotary is well on the way.

9XX.—How's that 7 mc coil job progressing, Basil? Haven't heard you yet, but expect you are mowing the dx down. Let's hear from you.

9RM —Had a letter from Peter and he is all set to go when he gets an antenna pole that will hold the Zepp up. Now has a few more out chaps for his "H's" with six dits in em.

9GW.—Has at last staged a come-back and fb too George. We are jolly pleased to hear your cheerful voice again. The trouble was in the gen. and also in a transformer. and R9oo sig. you put in here on 40 is a credit to you oc. By the way, if any of your chaps are working Geo., and you hear at the end of each over a faint voice say, "Make 'im die," well that is just a New Guinea relay in operation. What is the starting up word. "Kerrup im." ??? hi!

9BW —I told you that Bill would be off the air for an indefinite period and knew at the time I should not have said it because I met him to-day and darned if he wasn't full of a new rig and modulator he was building.

9MC.—Still out on leave so nd from "Wewak Willie."

9KO.—A newcomer and don't know much about you yet but believe you have an eco rig.

9HB.—Just finished the rig to-day, but found the ant. would not take the "juice," so the sig won't hit the air till tomorrow. Good luck Harley and plenty dx to you.

9NB.—Will be on next week with the rotary firing shots in all directions and we have great hopes from this ham.

9RC.—Haven't heard from you for a long time Ron but heard you on 40 with a very nice signal a few weeks back. Hope to have a chat with you soon

9VC.—Not much doing on usual these days. Landed VP5PZ on fone and had a fine chat to him but haven't heard him since. Also worked XZ2JB for a new country. Condx are not so good yet but are changing rapidly. We can hear the J and XU chaps coming through very well now and the W's are very hard to have a good contact with. Did I tell you the tale of the European beam put up hr. Heard a few ONs, SM and Gs coming in so called "CQ" Europe and back came a W6 who wanted to know why I didn't put up a beam on U.S.A.

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